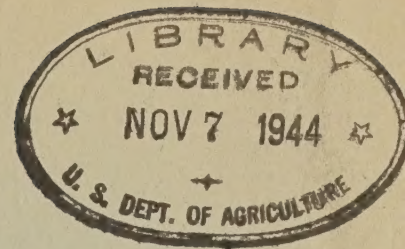


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1-9
E461A
Cop. 2

Puerto Rico Experiment Station
of the
United States Department of Agriculture



AGRICULTURAL NOTES

NO. 79 PAGE 1

MAYAGUEZ, P. R. JUNE 28, 1937

THE INTRODUCTION FROM FIJI INTO PUERTO RICO OF

A PREDATOR OF THE BANANA CORM WEEVIL

BY

KENNETH A. BARTLETT, ASSISTANT ENTOMOLOGIST,
DIVISION OF FOREIGN PARASITE INTRODUCTION,
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE,
UNITED STATES DEPARTMENT OF AGRICULTURE /A

THE BANANA CORM WEEVIL DESTROYS BANANA PLANTINGS IN PUERTO RICO.

THE GROWING OF BANANAS, MUSA SAPIENTUM, THE YELLOW EDIBLE BANANA; MUSA CAVENDISHII, THE DWARF BANANA; AND MUSA PARADISIACA, THE PLANTAIN OR COOKING BANANA, IS AN IMPORTANT AGRICULTURAL PURSUIT IN PUERTO RICO. THE LAST SPECIES, M. PARADISIACA, IS ESPECIALLY IMPORTANT, AS IT IS USED EXTENSIVELY IN COOKING AND IS A PART OF THE EVERYDAY DIET IN THE ISLAND.

SINCE THE DISCOVERY OF THE BANANA CORM WEEVIL, COSMOPOLITES SORDIDUS GERM. IN VEGA ALTA, PUERTO RICO, IN 1921 THIS PEST HAS SPREAD TO EVERY SECTION OF THE ISLAND. IT ALSO OCCURS IN OTHER ISLANDS OF THE WEST INDIES, IN FLORIDA, BRAZIL, THE MALAY ISLANDS, AUSTRALIA, AND THE FIJI ISLANDS. THE INSECT ATTACKS ALL SPECIES OF BANANAS BUT IS A MUCH MORE SERIOUS PEST OF THE PLANTAIN THAN OF ANY OF THE OTHER SPECIES.

THE LARVAE AND ADULTS OF THE BANANA CORM WEEVIL FEED AT THE BASE OF THE STEM OR CORM OF THE PLANT. THIS CONTINUED TUNNELING RESULTS IN REDUCING THE BASE TO A MESHWORK OF DECAYING PLANT TISSUE. THE LEAVES OF THE PLANT BECOME SICKLY YELLOW IN COLOR AND THE FRUIT FAILS TO FILL OUT AND MATURE. AS THE PLANT BECOMES MORE RID- DLED WITH TUNNELS IT MAY BE EASILY BLOWN OVER BY THE WIND.

THE INTRODUCTION OF A PREDATOR OF THIS SERIOUS PEST WAS A PROJECT UNDER- TAKEN BY THE BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE OF THE UNITED STATES DEPART- MENT OF AGRICULTURE IN 1936 TO AID IN THE CONTROL OF THIS INSECT IN PUERTO RICO.

/A NOW ASSOCIATE ENTOMOLOGIST, PUERTO RICO EXPERIMENT STATION, UNITED STATES DEPARTMENT OF AGRICULTURE.

ONLY ONE EFFECTIVE NATURAL ENEMY OF THE WEEVIL IS KNOWN.

IN ALL OF THE COUNTRIES IN WHICH THIS PEST IS FOUND THERE HAS BEEN DISCOVERED BUT ONE EFFECTIVE NATURAL ENEMY, A HISTERID BEETLE THAT FEEDS ON THE LARVA AND PUPA. THIS PREDATORY BEETLE, PLAESIUS JAVANUS ARR., WAS FOUND IN JAVA AND LATER INTRODUCED INTO FIJI, WHERE IT HAS BECOME ESTABLISHED.

NO DEFINITE RECORDS OF INSECT PARASITES OF THIS SPECIES HAVE BEEN NOTED, ALTHOUGH ONE OR TWO INSECTS HAVE BEEN RECORDED AS DOUBTFUL PARASITES OF THE WEEVIL.

PLAESIUS JAVANUS, PREDATOR OF THE BANANA WEEVIL, WAS SENT TO PUERTO RICO.

THROUGH THE COOPERATION OF THE BRITISH AUTHORITIES IN FIJI A SHIPMENT OF THE BANANA WEEVIL PREDATOR, P. JAVANUS, WAS MADE TO PUERTO RICO. IT WAS ASSEMBLED BY THE GOVERNMENT ENTOMOLOGIST, H. W. SIMOND, AT SUVA, FIJI. THIS SHIPMENT WAS MADE BY BOAT FROM FIJI TO SAN FRANCISCO AND FROM THERE BY AIR EXPRESS TO SAN JUAN.

THE CONSIGNMENT CONSISTED OF 575 ADULTS OF P. JAVANUS PACKED IN MOIST MOSS. THE SHIPMENT LEFT FIJI ON FEBRUARY 12, 1936, WAS RECEIVED IN SAN JUAN MARCH 1, AND WAS OPENED THE FOLLOWING DAY AT MAYAGUEZ. THERE WERE 568 LIVING BEETLES FOUND WHEN THE SHIPMENT WAS EXAMINED.

THE ADULT PREDATORY BEETLES ARE RAVENOUS FEEDERS.

A COLLECTION OF BANANA WEEVIL LARVAE WAS ON HAND TO FEED THE PREDATORS ON ARRIVAL AT MAYAGUEZ. THE LARVAE AND PREDATORS WERE PLACED TOGETHER IN A CAGE AND IMMEDIATELY THE WEEVIL LARVAE WERE SET UPON BY THE PREDATORY BEETLES. THE BEETLES RAPIDLY TORE THE LARVAE APART AND WERE CONTINUOUSLY FIGHTING FOR THE RIGHT TO FEED ON THE LARVAE. THE PREDATORS WERE NATURALLY EXTREMELY HUNGRY ON ARRIVAL AFTER THE LONG TRIP FROM FIJI, BUT IF THEIR DESIRE TO FEED IS ANY INDICATION OF THEIR VORACIOUSNESS IN THE FIELD, THEY SHOULD PROVE EFFECTIVE AS A CHECK ON THE BANANA-WEEVIL POPULATION. IN THIS REGARD IT SHOULD BE STATED THAT NOT ONLY THE ADULTS OF THESE BEETLES BUT ALSO THE BEETLE LARVAE ARE PREDACIOUS IN HABIT AND FEED ON THE BANANA-WEEVIL BORERS.

MORE THAN 500 ADULTS OF THIS PREDATOR WERE LIBERATED IN PUERTO RICO.

THE LIBERATIONS OF PLAESIUS JAVANUS, THE BANANA WEEVIL PREDATOR, WERE MADE AT TWO LOCALITIES ON THE ISLAND AS SHOWN IN TABLE 1, WHICH FOLLOWS, WITH DATES AND NUMBERS LIBERATED.

